CLAIMS

What is claimed is:

1.   A method of scanning with an image processing apparatus
which has an image sensor, and performs the scanning by reading an original document having
a rectangular periphery line by line, the method comprising:

moving the image sensor;

determining whether a first side of the rectangular periphery is detected by the image
sensor;

detecting first and second reference points representing first and second end points of
the first side;

receiving and scanning an image between the first and second reference
points;

determining whether a second side of the document opposite to the first side is
detected; and

stopping the scanning when it is determined that the second side is detected, and
stopping the image sensor.

2.   The method according to claim 1, wherein the determining whether the first side
is detected comprises:

determining whether a first straight line image corresponding to the first side is detected,
wherein the moving of the image sensor occurs after the determining that the first straight line
image is not detected; and

determining whether second and third straight line images are detected further than a
predetermined distance from the first and second end points of the first straight line image in a
moving direction of the image sensor, wherein the detecting of the first and second reference
points occurs after the determining that the second and third straight line images are detected,
and the moving of the image sensor occurs after the determining that the second and third
straight line images are not detected.

3.   The method according to claim 1, wherein a starting point and an ending point of
the first side correspond to the first and second end points of the first straight line image.

4.   The method according to claim 1, wherein the receiving and scanning of the image comprises:

detecting a third reference point having a predetermined distance from the first reference point, and a fourth reference point having the predetermined distance from the second reference point; and

scanning between the first and third reference points and between the second and fourth reference points as an outstanding- periphery portion of the image, and scanning between the third and fourth reference points as a general portion of the image.

5.   The method according to claim 4, wherein the scanning as the outstanding-periphery portion and the general portion comprises scanning a predetermined line as the outstanding- periphery portion after the detecting of the first side, and the general portion is scanned after the scanning of the predetermined line.

6.   The method according to claim 1, wherein the determining whether the second side is detected comprises:

determining whether a fourth straight line image is detected, wherein the receiving and scanning of the image occur after determining that the fourth straight line image is not detected; and

determining whether second and third straight line images are detected further than a predetermined distance from first and second end points of the fourth straight line image in a moving direction of the image sensor, wherein the receiving and scanning of the image between the first and second reference points occur after the determining that the second and third straight line images are detected, and the stopping of the scanning and the image sensor occurs after the determining that the second and third straight line images are not detected,

wherein the fourth straight line image corresponds to the second side of the rectangular periphery.

7.   The method according to claim 2, wherein the second and third straight-line images respectively correspond to the second side and a third side of the document.

8.   The method according to claim 2, further comprising determining whether the detected second and third straight line images are at the first and second end points, wherein the moving of the image sensor occurs after the determining that the second and third straight line images are not at the first and second end points.

9.   An apparatus to scan an original document having a rectangular periphery line by line, the apparatus comprising:

an image sensor receiving an image of the original document;

a periphery detecting portion to detect a first side of the rectangular periphery or a second side opposite to the first side in response to the received image, and outputs the a result of the detection of the first side;

a reference point detecting portion to detect first and second reference points corresponding to first and second end points of the first side according to the results of the detection of the first and second end points, and outputs the detected first and second reference points;

an image scanning portion which scans and stops scanning the image between the detected first and second reference points; and

an image sensor driving portion to move the image sensor in response to an image-scanning request signal, or to stop the image sensor in response to the results of the detection of the second side.

10.   The apparatus according to claim 9, wherein the periphery detecting portion comprises:

a first-straight-line-image checking portion checking a first straight line image corresponding to the first side, and outputting results of the checking of the first straight line image as a first check signal;

a second-straight-line-image checking portion to check whether second and third straight line images are detected further than a first predetermined distance from the first and second end points of the first straight line image in a moving direction of the image sensor in response to the first check signal, and to output the results of the checking of the second and third straight line images as a second check signal;

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a third-straight-line-image checking portion checking a fourth straight line image, and outputting the results of the checking of the fourth straight line image as a third check signal; and

a fourth-straight-line-image checking portion to check whether the second and third straight line images are detected further than a second predetermined length from end points of the fourth straight line image in a moving direction of the image sensor in response to the third check signal, and output the results of the checking whether the second and third straight line images are detected as a fourth check signal.

11.   The apparatus according to claim 10, wherein the image scanning portion s comprises:

a detailed-reference-point detecting portion detecting a third reference point having a third predetermined distance from the first reference point and a fourth reference point having the third predetermined distance from the second reference point; and

a classified image scanning and processing portion to respond to the detected first, second, third, and fourth reference points, scan between the first and third reference points and between the second and fourth reference points as an outstanding- periphery portion of the image of the original document, and to scan between the third and fourth reference points as a general portion of the image of the original document.

12. The apparatus according to claim 9, wherein the classified image scanning and processing portion scans a predetermined line as the outstanding- periphery image after the first side is detected, and scans past the predetermined line in the moving direction of the image sensor as the general portion.

13.   The apparatus according to claim 9, further comprising a flatbed, wherein the image sensor is moved below the flatbed.

14.   A method comprising:

moving an image sensor a single time from a first side of a document to a second side of the document opposite the first side;

detecting a size of the document during the moving; and

scanning the document during the moving.

15.   The method according to claim 14, wherein the scanning comprises scanning the document line by line.

16.   The method according to claim 14, wherein the scanning comprises scanning a rectangular document.

17.   The method according to claim 14, further comprising:

detecting second and third straight line images; and

determining whether the second and third straight line images are respectively second and third sides of the document.

18.   The method according to claim 17, wherein the determining whether the second and third straight line images are second and third sides comprises:

detecting first and second end points of the first side; and

determining whether the second and third straight line images are further than a predetermined distance from the first and second end points.

19.   The method according to claim 14, wherein the moving comprises moving the image sensor only within an area of the scanned document.